Open/open pipe.

Length = 2.12 m

Velocity of sound = 340 m/s

Find frequencies of 3, 6, 8 harmonics.

$$f_n = \frac{nv}{2L}$$

all harmonics exist

$$f_3 = \frac{(3)(340\ m/s)}{2(2.12\ m)}$$

$$= 240.6\ Hz$$

$$f_6 = \frac{(6)(340\ m/s)}{2(2.12\ m)}$$

$$= 481.1\ Hz$$

$$f_8 = \frac{(8)(340\ m/s)}{2(2.12\ m)}$$

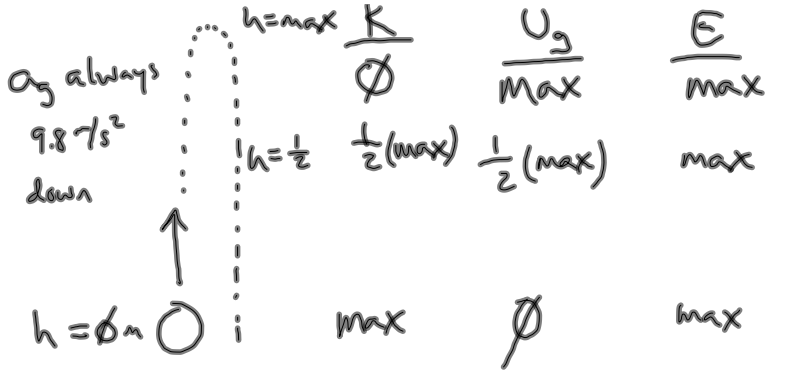
$$= 641.5\ Hz$$

open/open or standing wave on a string

- $f_n = \frac{nv}{2L}$
- all harmonics

open/closed tube

- $f_n = \frac{nv}{4L}$
- only odd harmonics



Resistors in series have the same current but different voltages.

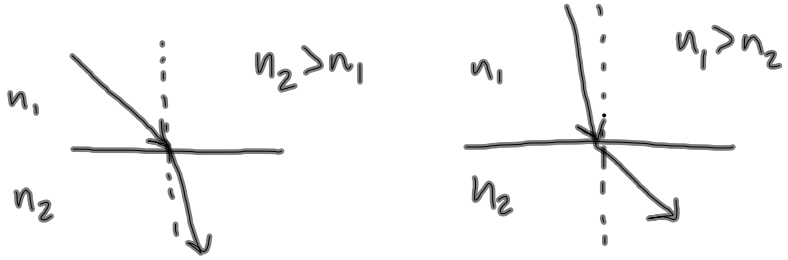
Resistors in parallel have the same voltage but different currents.

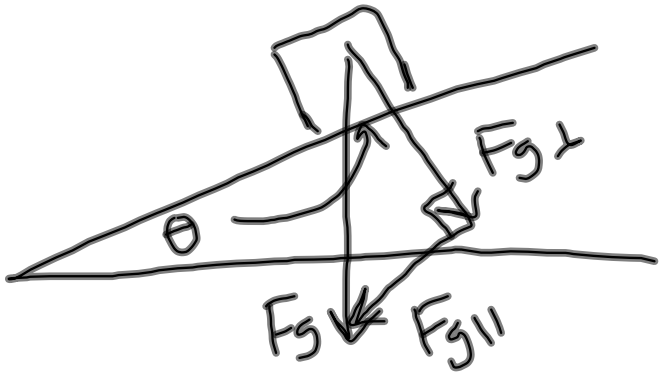
Voltage drops across resistors have to add to total voltage gain when resistors connected in series.

Current in each branch must add together to incoming current when resistors connected in parallel.

When going from lower index of refraction to higher index of refraction, light bends towards the normal.

Opposite is true when going from higher n to lower n.





For work to happen, some component of force vector must be in the same direction as the displacement vector.

For example problems, go back to the posted notes.

The exam is weighted more heavily on the fourth quarter.